

IN THE CLAIMS

1. (Original): A data processing system with programmable addressing, comprising:
 - multifunctional input/output devices in a logical partition environment;
 - control bits located in a memory, wherein the control bits allocate the multifunctional input/output devices into memory;
 - an address bus leading the control bits to locations for the multifunctional input/output devices;and
 - a programmable address control, wherein the programmable address control relocates individual functions.
2. (Original): A method of programmable addressing comprising the steps of:
 - relocating functions within a multifunctional chip to be distributed across multiple logical partitions; and
 - maintaining security over the distribution mechanism.
3. (Original): A method for protecting control bits in a data processing system, the method comprising:
 - choosing an address bit from a plurality of address bits that store addresses to data processing system functions; and
 - inverting the address bit such that any individual operating system instance in a set of operating system instances is unable to access the stored address; wherein the set of operating system instances are safeguarded from being corrupted and the other instances of the operating system are safeguarded from being affected.
- 4-6. (Cancelled).
7. (Original): A computer program product in a computer readable media for use in a data processing system for programmable addressing, the computer program product comprising:
 - first instructions for relocating functions within a multifunctional chip to be distributed across multiple logical partitions; and
 - second instructions for maintaining security over the distribution mechanism.
8. (Original): A computer program product in a computer readable media for use in a data processing

system for protecting control bits in a data processing system, the computer program product comprising:
first instructions for choosing an address bit from a plurality of address bits that store addresses to data processing system functions; and
second instructions for inverting the address bit such that any individual operating system instance in a set of operating system instances is unable to access the stored address; wherein the set of operating system instances are safeguarded from being corrupted and the other instances of the operating system are safeguarded from being affected.

9-11. (Cancelled).

12. (Original): A system for programmable addressing, the system comprising:
first means for relocating functions within a multifunctional chip to be distributed across multiple logical partitions; and
second means for maintaining security over the distribution mechanism.

13. (Original): A system for protecting control bits in a data processing system, the system comprising:
first means for choosing an address bit from a plurality of address bits that store addresses to data processing system functions; and
second means for inverting the address bit such that any individual operating system instance in a set of operating system instances is unable to access the stored address; wherein the set of operating system instances are safeguarded from being corrupted and the other instances of the operating system are safeguarded from being affected.

14-16. (Cancelled).

17. (New): The data processing system of claim 1, wherein the programmable address control moves a control area of a multifunctional input/output device to an area secure from access by other computer programs and remaps internal functions of the multifunctional input/output device to normal address ranges expected by a computer program accessing the multifunctional input/output device.

18. (New): The data processing system of claim 1, wherein the programmable address control relocates individual functions to be distributed across multiple logical partitions and maintains security in distributing the individual functions.

19. (New): The data processing system of claim 1, wherein the programmable address control chooses an address bit from a plurality of address bits that store addresses to data processing system functions and inverts the address bit such that any individual operating system instance in a set of operating system instances is unable to access the stored address, wherein the set of operating system instances are safeguarded from being corrupted and the other instances of the operating system are safeguarded from being affected.
20. (New): The data processing system of claim 1, wherein the data processing system contains multiple operating systems and wherein at least one of the multifunctional input/output devices are shared by a number of the multiple operating systems.
21. (New): The data processing system of claim 1, wherein the individual functions for a multifunctional input/output device are relocated by inserting an inverter on an address bus for the multifunctional input/output device.
22. (New): The data processing system of claim 1, wherein the inverter is programmable and may be changed based on any operating system environment and frequency of initialization.
23. (New): The data processing system of claim 1, wherein the multifunctional input/output device one of a modem, a serial port, USB infrared port, or a network adapter.